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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,807

10/10/2006

Susanne Kessler

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EXAMINER

MAEWALL, SNIGDHA

ART UNIT

PAPER NUMBER

1612

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,807	Applicant(s) KESSLER ET AL.	
	Examiner Snigdha Maewall	Art Unit 1612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 July 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7, 11-16 and 19 is/are pending in the application.
- 4a) Of the above claim(s) 1-6, 8-10, 17-18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7, 11-16 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Summary

1. Receipt of Applicant's arguments and amended claims filed on 07/31/10 is acknowledged.

Claims 1-6, 8-10, 17-18 and 20-27 have been withdrawn.

Claims **7, 11-16 and 19** are under prosecution. The rejections not reiterated herein have been withdrawn in light of applicant's arguments. Translation of DE 10322444 is accepted. Amendment of incorrectly spelled (J) to (I) in claims is acknowledged.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7, 11-12, 14-16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fechner et al. (WO 03/018498) (IDS), wherein US 2004/0253321 is being used as the English language equivalent of WO 03/018498 in view of Mazany et al. (US 2005/0022698).

(NOTE: All citations to Fechner are to US 2004/0253321).

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Fechner teaches anti-microbial, anti-inflammatory, wound-healing glass powders preferably comprising (i) 20-80% w/w SiO₂, (ii) 0-40% w/w Na₂O, (iii) 0-40% w/w K₂O, (iv) 0-40% w/w Li₂O, (v) 0-40% w/w CaO, (vi) 0-40% w/w MgO, (vii) 0-40% w/w Al₂O₃, and (ix) 0-1 % w/w P₂O₅, and 0-40% w/w B₂O₃ (Title; abstract; [0015]; [0029]; claims 1-8). In some embodiments, the glass powders may also comprise Ag, Cu, and Zn to achieve synergistically strengthened antimicrobial and anti-inflammatory effects [0021]. The particle sizes of the glass powder are ideally below 2 microns or 1 micron ([0030] and claims 12-14). The B₂O₃ is added to act as a network-forming ion and to control the anti-inflammatory and wound-healing effects of the glass powders [0039].

Fechner does not teach the claimed amount of P₂O₅.

Mazany teaches a reactive glass comprising Li₂O, P₂O₅, B₂O₃, MgO, BaO, and Al₂O₃ in claim 15, wherein the amounts of and P₂O₅ and B₂O₃ can range from ~7 % w/w to ~83% w/w and ~0.5% w/w to ~84% w/w, respectively. In claim 16 Mazany teaches a glass comprising Li₂O, P₂O₅, B₂O₃, MgO, BaO, Al₂O₃, and SiO₂, wherein the amount of silicon oxide may range from ~0.5% w/w to ~18% w/w and B₂O₃ and P₂O₅ may be present in amounts up to about 59% w/w and 87% w/w, respectively.

Mazany teaches that the particle size of the reactive glass is important and can be optimized to tune the glass reactivity, wherein smaller particle sizes result in greater glass reactivity [0090].

It would have been obvious to one of ordinary to optimize the amount to more than 60 to 80 % for P₂O₅ because Mazany teaches glass composition of amount to up

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to 87%, absent evidence of any criticality shown by applicants shown by the claimed compounds, it would be obvious to have performed experimental manipulations and would have optimized the amounts to obtain workable amounts because both the references are drawn to glass composition and both the references teach application of P2O5 in glass teach composition. Since the claims recite the ranges for ZnO 0 - 15 percent by weight

Ag2O 0.01 - 5 percent by weight
CuO 0 - 10 percent by weight
GeO2 0 - 10 percent by weight
TeO2 0 - 15 percent by weight
Cr2O3 0 - 10 percent by weight
J 0 - 10 percent by weight,

the amount of Ag2O to be from 0 to 0.5% reads on the total sum of the above components as claimed that is < than 0.01%.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fechner et al. (WO 03/018498) (IDS), wherein US 2004/0253321 is being used as the English language equivalent of WO 03/018498 in view of Mazany et al. (US 2005/0022698) and further in view of JP61186248 and JP 7291654 presented in IDS.

The references discussed above do not disclose strontium oxide in the composition.

JP'248 teaches strontium oxide, aluminium oxide, lithium sodium potassium and boron oxide in glass ceramic composition and also teaches that the thermal expansion can be adjusted between 38 deg. C to 380 deg. C., see abstract. The reference thus

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teaches equivalency between aluminum, calcium, boron and strontium oxides used in glass composition.

JP 7291654 teaches antimicrobial glass powder comprising alkaline earth metals such as barium, calcium and magnesium in the composition, abstract.

It would have been obvious to one of ordinary to have utilized strontium oxide in the teachings of combined references discussed above because JP'248 teaches incorporation of strontium oxide in glass composition and provides equivalency among other oxides which are disclosed in primary references and JP'654 teaches utilization of alkaline earth metal oxides such as barium and calcium as antimicrobial powder. One of ordinary would have been motivated to utilize alkaline earth metal oxides such as strontium oxide as antimicrobial component in forming glass composition and would have had reasonable expectation of success in obtaining such composition.

5. Claims 7, 11-12 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aucar et al. (DE 10322444 A1) (Eng. Abs. Only, of record).

Aucar teaches cosmetic compositions with decorative and antimicrobial effects that contain bioactive glass, colored glass, glass-ceramic, glass powder, glass-ceramic powder, and/or a glass/nanoparticle composite (abstract). The glass-based components impart antimicrobial properties as well as a wide range of optical effects (Id.). Preferred compositions comprise SiO₂ (35-80%), Na₂O (0-35%), P₂O₅ (0-80%), MgO (0-5%), Ag₂O (0-0.5%), AgI (0-0.5%), NaI (0-5%), TiO₂ (0-5%), K₂O (0-35%), ZnO (0-10%), Al₂O₃ (0-25%), and B₂O₃ (0-25%). (see paragraphs [0017-0019]. The

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average particle size of the glass powder, glass-ceramic powder, or colored glass powder is below 100 microns, especially below 1 micron (Id.).

The reference teaches overlapping amounts of the claimed P_2O_5 , Al_2O_3 and Na_2O ; as such case of obviousness exists. The reference does not teach the same amount of SiO_2 as claimed, however to manipulate workable ranges by doing experimental manipulations of amounts would be obvious to one of ordinary skill in the art because the reference teaches using silica oxide for the same reason and claimed in instant application that is for glass composition and thus variables such as the various components claimed can be optimized absent evidence of unexpected results.

Since the claims recite the ranges for ZnO 0 - 15 percent by weight

Ag₂O 0.01 - 5 percent by weight

CuO 0 - 10 percent by weight

GeO₂ 0 - 10 percent by weight

TeO₂ 0 - 15 percent by weight

Cr₂O₃ 0 - 10 percent by weight

J 0 - 10 percent by weight,

the amount of Ag₂O to be from 0 to 0.5% reads on the total sum of the above components as claimed that is < than 0.01%.

Response to arguments

6. Applicant's arguments filed 07/13/10 have been fully considered but they are not persuasive.

Applicant argues that independent claim Calls for a glass composition including > 60 - 50 wt.% P_2O_5 . Fechner et al. '321 discloses a glass composition having 0-1 wt.% P_2O_5 (paragraph [0015]) and teaches in paragraphs [0007] and [0010] that a drawback

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in existing antimicrobial glass powders is their high phosphorous content, which can exceed 1 wt.%. At paragraph [0061], Fechner et al. '321 indicates that it was surprising for the disclosed compositions to demonstrate an anti-inflammatory effect as it was previously recognized that only phosphorous-containing glasses with a phosphorous content greater than 1 wt.% had an anti-inflammatory effect. Applicant therefore contends that teaches away from glass compositions including greater than 1 wt.% P2O5 and for this reason, one of ordinary skill in the art, with no knowledge of the present invention, would not modify the glass composition of Fechner et al. '321 to include > 66 - 80 wt.% P2O5 as claimed, either in view of Mazany et al. '698 or any other reference. Fechner et al. '193 discloses a glass composition having a P2O5 content of 0-15 wt.% (Claim 1), e.g., 2-10 wt. (paragraph [0024]), and also teaches in paragraph [0015] that the concentration of P2O5 should not be above 16 wt.% as otherwise the chemical stability of the silicate glasses decreases too strongly. Applicant therefore contends that '193 teaches away from glass compositions including greater than 16 wt.% P2O5 and for this reason, one of ordinary skill in the art, with no knowledge of the present invention, would not modify the glass composition of Fechner et al. '193 to include > 66 - 80 wt.% P2O5 as claimed, either in view of Mazany et al. '698 or any other reference. Independent Claim 7 also calls for an SiO2 content of 0-10 wt. %. Fechner et al. '321 discloses a glass composition having a SiO2 content of 20-80 wt.% (abstract) and teaches in paragraph [0035] that the SiO2 content is preferably between 35 to 80 wt.%, and that with lower concentrations the hydrolytic resistance is greatly diminished so that the grinding in aqueous media is no longer a

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guaranteed without significant dissolution of the glass. Fechner et al. '193 discloses a glass composition having 30-95 wt.% SiO₂ (abstract), e.g., 30-80 wt.% (paragraph [0013]), and also states in paragraph [0013] that at lower concentrations the hydrolytic resistance [de]creases markedly, so that the grindings that can no longer be guaranteed not to dissolve significantly in aqueous media. Therefore, both Fechner et al. '321 and Fechner et al. '193 fail to disclose a glass composition having the claimed SiO₂ content of 0-10 wt.% and also teach away from an SiO₂ content of less than 20 wt.% (Fechner et al. '321) or less than 30 wt.% (Fechner et al. '193).

Applicant's arguments are not persuasive. As stated in the rejection above, Mazany has been relied upon for the teachings of P₂O₅ amount which teaches overlapping amounts to that with claimed amounts and thus creates case of obviousness. In response to applicants arguments regarding teaching away from Fechner's teachings of low amounts of P₂O₅, it is pointed out that Mazany has been combined to show that high amounts of phosphorus pentaoxide was known to be used in preparation of glass composition. As such routine experimentation of amounts in order to obtain suitable proportion would have been within the skill of an artisan. In contrast to teaching away prior art teaches using phosphorus pentaoxide in ion releasing glass preparation. In this context the examiner points out to Fed. Cir. Ruling, ""A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including non preferred embodiments. (Merck & Co. v. Biocraft Laboratories, 874 F. 2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. Denied, 493 U. S. 975 (1989); Upsher-Smith Labs. PamLab, LLC, 412 F. 3d 1319, 1323, 75 USPQ 2d

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1213, 1215 (Fe. Cir. 2005). The court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it was disclosed (Celeritas Technol1516, 1522-23 (Fed. Cir. 1998). ogies Ltd v. Rockwell International Corp., 150 F, 3d 1354, 1361, 47 USPQ2d. As such, experimentation to obtain workable range of P2O5 would have been obvious to one of ordinary skill in the art at the time of instant invention.

Applicant argues that attached is a machine translation of Aucar et al. '444, which discloses a glass composition having a SiO2 content of 35-80 wt.%. On the 12th paragraph of page 3 of the machine translation, it is clear that Aucar et al. '444 discloses an SiO2 content of 35-80 wt.%, and also discloses that disadvantages are realized with lower concentrations. In this manner, Aucar et al. '444 fails to disclose a glass composition having the claimed SiO2 content of 0-10 wt.%, and also teaches away from glass compositions having a SiO2 content lower than 35 wt.%.

Applicant's arguments are not persuasive. These arguments are not persuasive , as discussed above, the art does not teach that silicon dioxide cannot be used at all, prior art teaches its utilization in ion releasing preparation and thus routine optimization to obtain best possible results would have been within skill of an artisan absent evidence of **unexpected results** with claimed amounts.

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Snigdha Maewall whose telephone number is (571)-272-6197. The examiner can normally be reached on Monday to Friday; 8:30 a.m. to 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frederick Krass can be reached on (571) 272-0580. The fax phone number for the organization where this application or proceeding is assigned is 571-273-0580. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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Customer Service Representative or access to the automated information system, call
800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Snigdha Maewall/

Examiner, Art Unit 1612

/Gollamudi S Kishore/

Primary Examiner, Art Unit 1612